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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,099	12/10/2003	Je-Young Chang	42P18071	9174
59796	7590	06/15/2007		
INTEL CORPORATION c/o INTELLEVATE, LLC P.O. BOX 52050 MINNEAPOLIS, MN 55402			EXAMINER WILSON, GREGORY A	
			ART UNIT 3749	PAPER NUMBER
			MAIL DATE 06/15/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No.		Applicant(s)	
	10/733,099		CHANG ET AL.	
	Examiner		Art Unit	
	Gregory A. Wilson		3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 June 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 November 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

The finality of the rejection submitted on March 7, 2007 has been withdrawn in view of newly discovered prior art references submitted herewith. Prosecution on the merits of this application is reopened on claims 15-21 considered unpatentable for the reasons indicated below:

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the fan in claim 20 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 15-19** are rejected under 35 U.S.C. 102(b) as being anticipated by **Calhoun et al (4,351,388)**. **Calhoun et al** discloses a heat pipe and includes a coolant (ammonia), a first structure (wick core 14) that includes particles (glass beads) that have an average diameter appears to be only slightly bigger than the mesh dimension ( $W_b$ )=0.014 inch (355.6  $\mu$ m), a second structure (15) (which is mesh therefore anticipating claim 18) around the first structure and wets the first structure with ammonia, the plurality of outer walls that enclose the second structure in an air tight manner is represented by elements (11, 17, 22). It is recognized that the second structure has a higher thermal resistance than the first structure in order to allow vaporization within the second structure by way of the beads to form a vapor that will enter into area (23) and since it extends around the beads (14) including their top surface and is capable of allow pooling within (15) (SEE Figure's 2 & 3).

**Claims 15-21** are rejected under 35 U.S.C. 102(b) as being anticipated by **Kroliczek et al (6,564,860)**. **Kroliczek et al** discloses a capillary wick that has properties that prevent nucleation inside the body of the wick and includes a coolant (542), a first structure (534) including particles having an average diameter greater than about 50  $\mu\text{m}$  as evidenced by Table 1 wherein the wick pore size is in the range of (0.01 to 100 microns), a second structure (540) which is around the first structure and wets the first structure on multiple sides (SEE Figure 16) and includes outer wall structure which encloses the coolant, and first and second structures and allows sealing (SEE Figure 16, particularly at sealing surface 518). The wick structure is situated around a perimeter of a boiling structure which constitutes the vapor grooves (532) and as taught in column 4, lines 25-28, a fan can be used to move air across the heat pipe. With regard to claim 17, the thermal resistances are discussed in column 8, lines 1-14.

**Claims 15-18** are rejected under 35 U.S.C. 102(b) as being anticipated by **Rosenfeld et al (5,076,352)**. **Rosenfeld et al** discloses a high permeability wick structure for heat pipes and includes a coolant (inherent), a first structure (20) including particles (28) having an average diameter of 0.0045 inches (114.3  $\mu\text{m}$ ), a second structure (22, 26) made of a screen or perforated sheet (claim 18) around the first structure and wets (contacts) the first structure and particles, all within an airtight outer wall (12). With regard to claim 17, it is understood that the second structure is more thermally resistant than the first structure in order to contain the heat within vapor space (14) and therefore not absorb heat, limiting vaporization.

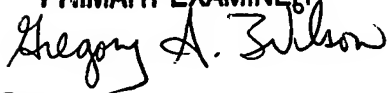
Art Unit: 3749

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory A. Wilson whose telephone number is (571)272-4882. The examiner can normally be reached on 7 am - 4:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Rinehart can be reached on (571) 272-4881. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GREGORY WILSON  
PRIMARY EXAMINER



Gaw  
June 11, 2007